DESCRIPTION OF A LARGE-SCALE STUDY DESIGN TO ASSESS WORK-STRESS-DISEASE ASSOCIATIONS FOR CVD DISEASE

KARASEK Robert[1], BORTKIEWICZ Alicja[2], FERRARIO Marco[3], CLAYS Els[4], COLLINS Sean[5]

1 - Copenhagen U Dept Psychology/ U Mass Lowell Dept of Work Environment
2 - Nofer Institute of Occupational Medicine, Lodz, Dept of Work Physiology and Ergonomics
3 - Univ of Insubria, Insubria, Varese, Dept of Experimental and Clinical Biomedical Sci
4 - University Hospital Ghent Department of Public Health
5 - U Mass Lowell, Dept of Physical Therapy

robert_karasek@uml.edu

A new level of studies is needed to answer important questions about the expanding global chronic disease burden for cardiovascular disease (CVD) and related conditions such as diabetes, metabolic syndrome, and obesity. Interpretability of much existing research is limited by partial models, partial measures, and by partial populations. A new study design structure requires grounding in a new theory beyond the current single-factor, a-theoretic epidemiological studies. Such a new platform for the design of large-scale Work/Stress/Disease studies would assess CVD-related disease mechanisms in a more general and dynamic form. It would be based on a new theory of disease causation, Stress-Disequilibrium Theory (SDT), and new Heart Rate Variability (HRV) data analytic strategies for measuring autonomic function exhaustion in an occupational stress context. The goal would be to assess the associations between social organizational risks, particularly at work, and hypertension, metabolic syndrome, and diabetes II.

SDT generates a new study design with (a) dual physiological pathways to address co-morbidity: one through autonomic control of cardiac output, and another through autonomic control of glucose regulation. The study design also (b) requires a four-stages of Controller/Controlled relationships, spanning across several levels of disease-related de-regulation: (1) from social risks at work, (2) through two disease development stages, and (3) looping back to social and distributional consequences of disease on working place organization.

A full-occupation-spectrum healthy working population is needed, large enough to assess disease development outcomes with statistical power - probably multi-site with several countries, and would include nested bio-monitoring and reliability studies.